

REPORT

LOWELL HOSPITAL,

REPORT MADE BY

JOHN T. W. WATSON, M.D.,

BY WILLIAM H. WATSON, M.D.,

Surgeon and Director of the Hospital.

LOWELL

1888



VIEW OF THE LOWELL HOSPITAL.

R E P O R T

OF THE

Lowell, Mass.

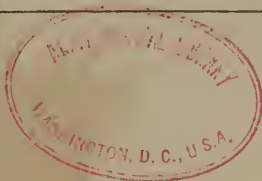
LOWELL HOSPITAL,

From 1840 to 1849.

MADE TO THE TRUSTEES, JUNE 12TH, 1849.

BY GILMAN KIMBALL, M. D.

Physician and Surgeon to the Hospital.



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LOWELL, June 12th, 1849.

At a meeting of the Trustees of the Lowell Hospital, it was voted that the following Report, by Dr. Gilman Kimball, the Physician and Surgeon, be published in pamphlet form.

REPORT.

HITHERTO, the only report upon the condition of the Lowell Hospital, has been such as has been made out, from year to year, by a Committee appointed from its Board of Trustees. This report has usually been of a very general character, and related entirely to its affairs through the immediately preceding year; and to this extent has furnished, in a summary form, all that seemed desirable.

Now that the period of nine years has elapsed since this Institution was first established, it has been thought proper to lay before its Trustees and others interested, such a statement of facts, drawn from its records, as will enable them to form a tolerably correct idea of its success, and how far its objects have been realized.

The following table gives a general representation of the cases admitted into the Hospital, during the last nine years, commencing May 10th, 1840 — the date of its opening — and terminating May 10th, 1849. Within this period there

have been received for treatment, 1627 cases. These, if duly classified, would embrace 71 different diseases. Such a classification, however, I have thought unnecessary, and have put down, in a tabular form, a *few* only of those diseases which appear most important among our operative population.

	Typhoid Fever,	Dysentery,	Pneumonia,	Bronchitis,	Rheumatism,	Scarletina,	Measles,	Consumption,	Small Pox & Varioloid,	All others,	
1840-'41	49	11	4	3	6	2	0	1			
1841-'42	102	5	33	16	11	9	3	1			
1842-'43	74	4	3	14	8	2	0	0			
1843-'44	63	3	6	3	8	0	2	3			
1844-'45	87	2	2	1	5	1	4	0			
1845-'46	114	2	7	4	9	9	6	3			
1846-'47	143	4	4	3	10	4	4	4			
1847-'48	108	21	2	6	6	0	7	1			
1848-'49	76	44	1	4	2	1	7	2	51		
Total.	816	96	62	54	65	28	33	15	51	407	1627
Died.	41	8	2	0	0	1	1	6	6	12	77

Looking at the results of the above cases, as stated in the Hospital Records, it appears that there have been discharged, cured, - - - - - 1464

Left the Hospital, relieved, - - - - - 75

" " " not relieved, - - - - - 11

Died, - - - - - 77

Total, 1627

Another table, as appears below, shows in a more detailed form, the number of cases of Typhoid fever, as they have

occurred in connection with the Hospital, distributed through the years and months of the same period.

	1840-'41	1841-'42	1842-'43	1843-'44	1844-'45	1845-'46	1846-'47	1847-'48	1848-'49	Total.
May,	0	3	12	7	3	5	7	10	7	54
June,	0	4	3	4	5	8	6	6	1	37
July,	2	9	5	4	2	10	15	12	3	62
August,	5	20	16	5	4	21	15	18	17	121
September,	8	25	7	5	17	12	17	11	27	129
October,	10	14	8	10	16	21	20	17	10	126
November,	2	10	4	7	16	5	15	10	4	73
December,	7	5	3	5	4	12	13	10	2	61
January,	5	1	0	5	4	8	15	4	3	45
February,	6	6	7	1	7	7	9	3	2	48
March,	2	3	7	7	4	9	8	4	1	44
April,	2	2	2	3	5	6	3	3		26
Total,	49	102	74	63	87	124	143	108	77	816
Died,	3	5	5	3	1	6	6	10	2	41
Diseases of all kinds received.	130	254	130	147	148	208	224	172	214	1627
Rate of mortality in Fever Cases	1 to 16.3	1 to 20.4	1 to 14.6	1 to 21	1 to 87	1 to 20.6	1 to 23.8	1 to 10.8	1 to 38	
Mortality, as applied to all diseases, same year,	1 to 43.3	1 to 50.8	1 to 26	1 to 49	1 to 148	1 to 34.6	1 to 37.3	1 to 17.2	1 to 107	

It appears from the above table, that of the 1627 cases received into the Hospital, 827 of them were Typhoid fever — a proportion of something more than 50 per cent. It appears further, that of these 827 cases, 41 proved fatal; thus giving one death to every twenty cases. Again, it appears from the same table, that this disease has been present in the Hospital through the whole period, since May, 1840, excepting May and June — the two first months of the Hospital's

* It may be questioned whether all the cases of fever here represented, were genuine. It is proper, therefore, to state, that the above table was made up from the Record, as it appears in the Hospital Register, where each case is designated immediately upon its admission; and that in a certain number of instances the subsequent history of the case proved this record to have been incorrect. It is believed, however, that with a most liberal allowance on this account, the difference would not amount to more than 10 per cent.

existence — January, 1843, and April, 1849 ; that the greatest number of cases occurred in 1846-'47 ; also, the greatest in proportion to all other diseases received during the year ; that the smallest number occurred in 1840--'41 ; also, the smallest in proportion to the other diseases, during the same year. The months of September and October have generally, but not uniformly, furnished the greatest number of cases. The smallest number falls upon the month of April. The largest number received during any one year, was 129. The smallest number, 26. The largest number in any one month, was in September of the last year.

The average duration of disease, in the above cases, cannot be accurately determined by the Hospital Records. It appears, however, that the average time of *continuance in the Hospital*, was about 14 days. In a large majority of cases, the patients were found to have been ill several days before their removal, and most of them subjects of medical treatment.

The above statement serves to illustrate one or two important points. It shows, in the first place, that Typhoid fever is the most constant, the most prevalent, and the most *important* disease among our operatives. That from this cause, more deaths occur, than from all other maladies coming under Hospital treatment. I think, too, it will appear that the disease is less fatal, and of shorter duration, than is generally supposed. Again, comparing the cases given in the above table, with similar cases treated elsewhere, it will appear that the results are remarkably favorable.*

The Report of Dr. James Jackson, of Boston, on Typhoid fever, as it occurred in the Massachusetts General Hospital, from the year 1824 to 1835, is probably as complete and accurate a record of this disease as can well be made. It

* From a statement furnished by one of the oldest and most respectable practitioners in Lowell, it appears that of 91 consecutive cases of Typhoid fever, occurring among the operatives on the different Corporations, and treated by him, at their boarding houses, 8 proved fatal ; or about 1 to 11.

may be proper to compare this report of Dr. Jackson's with the statement I now furnish, upon two points only, viz: the *rate* of mortality, and the *duration* of the disease. Dr. Jackson remarks, that of 303 cases of fever, 42 proved fatal, that is, 1 to 7.214, or, adding 40 more cases with only one death, 1 to 8, very nearly. As to the duration of disease in the cases given in this same report, we are only informed of the supposed *day of convalescence*. This is stated to have been about the 22d from the attack. The length of time these cases remained in the Hospital is not stated. It has already been shown, that of the cases received into the Lowell Hospital, the number that proved fatal is considerably less — that is, one to twenty, or very nearly — that the duration of disease, or rather the time of remaining in the Hospital, averaged about 14 days. This comparison, it is very obvious, shows results greatly in favor of the Lowell Hospital.* It is not intended, however, to be understood as affording any indication of the comparative merits of the two institutions, as regards the treatment or management of this disease. The difference here shown, therefore, may be attributed more properly to some other cause, or causes. Some of these seem to be sufficiently obvious; others, there may be, which are not so apparent. It is to the advantage of the Lowell Hospital, no doubt, that its patients are taken from a class of individuals better able to withstand disease, than those who ordinarily find their way into a similar city institution. The operative population of Lowell are young, robust, and generally, free from all established constitutional infirmities. It is just such a class as we should suppose would pass through disease in the shortest time, and with the least danger. Such circumstances are manifestly in favor of our Lowell population. Are there any circum-

* It appears from the Records of the Massachusetts General Hospital, that from August 1, 1839, to March 17, 1849, there had been received 436 cases of Typhoid fever; of this number 46 died, making the rate of mortality just 1 to 9.5.

stances relating to the *general arrangements* of the Lowell Hospital, which seem to give it any advantages over other similar establishments? This is a question, perhaps, that may not be easily answered; nevertheless, as regards one or two particulars, it would seem that the arrangements of this institution give it a superiority over most other establishments of the kind. To say nothing of its locality, as regards its advantages for pure air, there is secured to its inmates a degree of *quietude*, which is seldom, if ever realised, in larger and more public institutions. Indeed, I know of no other Hospital where this condition is so strictly enjoined, and so thoroughly maintained. On this point, I speak from pretty extensive personal observation, and the assertion, I think, will not be questioned by any one who has had equal opportunities to make a comparison. In all city institutions of this kind, so far as I have observed, the wards are generally large, and occupied by a correspondingly large number of patients. The patients too, are frequently surrounded by a great many different persons, making their daily visits in the capacity of physicians, assistants, and medical pupils. Again, where so many occupy the same ward, it is quite impossible that there should not occur, oftentimes, scenes which it were better the inmates generally, did not witness, or know of: I mean, particularly, cases of extreme suffering, and death.

In the Lowell Hospital, the patients are visited by one physician only, (excepting in cases of consultation,) by no assistants, by no pupils. The wards are comparatively small, never occupied by more than five beds, seldom more than four. In extreme cases, the entire ward is appropriated to a single patient, and in no instance is a patient allowed to witness a death, or know that such an event has occurred in the establishment. Indeed, every thing which may be supposed to operate injuriously on the mind or the senses, is most studiously avoided. The advantages here alluded to, though more or less important as regards all classes of dis-

cases, seem particularly so in connection with fever cases ; this, I suppose, would be the opinion of all practical men of the profession.

Alluding again, to Typhoid Fever, which I have spoken of as the most constant and important disease among our operatives, it should be remarked that the statement above given, affords no evidence of the proportion it bears to the same disease, as it occurs with the rest of our adult population. Nevertheless, I think it must have been impressed upon the conviction of every physician of several years residence in our city, that our operatives *as a class*, have suffered from it to a greater degree than the citizens at large. It is true, this fact may be accounted for, to a certain extent at least, by taking into consideration some of the peculiar circumstances connected with this portion of our population. Their age, for example, which does not probably exceed an average of more than twenty years,—their change of residence,—new employment, unusual confinement within doors,—and, with many of them, an almost entirely new mode of living,—these are circumstances, which, though unavoidable, must be looked upon as important, considered merely in the light of predisposing causes.

But it is a matter of still further importance to enquire whether our attention should not be directed to certain evils of a more direct and positive character,—evils not absolutely unavoidable in their nature, but such as are, in a good degree at least, susceptible of remedy.

The causes of fever in Europe, as well as in our own country, have elicited a great deal of investigation, and much important information concerning them has been brought to light. This has been particularly the case as regards the manufacturing districts of Great Britain. I am aware, however, that the tables furnished from this quarter are not altogether applicable to the history of fever, as it occurs in the manufacturing towns of New England. Still, it cannot

be denied, I think, that according to the natural tendency of things among us at present, the same evils that so glaringly and deplorably affect the sanitary condition of the manufacturing towns of Europe, are gradually making their appearance in our own; and nothing short of the most constant vigilance and effort will serve to keep them in abeyance. The statistical information, therefore, furnished by so many eminent medical men in Europe, is valuable, even in many particulars where at present we show no parallel. They expose certain evils that we have at least every reason to dread; and, although as yet we have not experienced them, they may furnish a motive to adopt seasonable measures by which they may be avoided.

Poverty, filth, insufficient and improper food, are invariably placed by foreign writers, among the prominent causes and accompaniments of fever, arising among their working classes. To these may be added a naturally defective constitution, and badly ventilated dwellings. These are conditions, however, though strikingly apparent in a European population, are, at present, seldom met with in New England. As regards age, sex, and kinds of employment,—these are elements in the history of disease, of apparently equal importance in all countries.

Looking over, then, the tables, furnished apparently with the greatest accuracy, from various Hospitals and other reliable sources, in Europe, we are struck with the invariable correspondence between the causes there enumerated, and the extent and severity of the diseases which they appear to originate. And I am fully impressed with the belief, that, were all the circumstances and conditions connected with *Typhoid Fever*, as it appears among us, carefully investigated and arranged, from year to year, we should see, that in our country, too, the same causes, or at least some of the most important of them, are as invariably present, and their relation to disease, as regards its prevalence and severity, just

as susceptible of demonstration. And it is in this connection that I would make special reference to the subject of *Ventilation* — particularly as it concerns our mills and corporation boarding houses. *Imperfect ventilation and infection* are almost invariably spoken of as associated evils in connection with the origin and prevalence of fever, in the manufacturing towns of Europe; and I very much mistake, if these same evils, though probably to a much less extent, are not found to have a very important bearing upon this same disease, as it appears here in the city of Lowell. I am aware that this idea, particularly as regards infection, has been opposed by some few of our physicians, and in some instances, I fear, with an unfavorable effect.

Dr. Davidson, senior physician to the Glasgow Royal Infirmary, of Scotland, remarks upon this subject, that the propagation of Typhoid fever is intimately connected with *filth and deficient ventilation*. He further states, in regard to the circumstances that render fevers communicable from one person to another, that “filthiness, although it tends to render fever more communicable, does not seem to act so powerfully in this respect as *deficient ventilation*, which, by concentrating the contagion, may render its operation on the system more certain.” “In proof of this,” he says, “we may quote the various attendants of our fever hospitals, who are generally very attentive to cleanliness in their persons, and yet, if unprotected, are almost invariably affected with fever, during some period of their attendance,— particularly if the wards are in a crowded state.”

“This fact, and the more frequent exemption of the attendants when the wards are moderately filled and well ventilated, seem to prove that contact with the patient is not so essential for the communication of the disease, as being surrounded by an atmosphere impregnated with a contagious miasma. And there are many instances where students have been affected with fever, after visiting the wards of the hos-

pital, without having come in contact with the patients, or their bed clothes."

"There can be no doubt, however, that simple contact of a typhoid patient, or of clothes that have been attached to him in any shape, may communicate the disease without the aid of even a partial impregnation of the atmosphere with contagious effluvia, and where the most perfect ventilation has been maintained."

Dr. Nathan Smith, formerly of New Hampshire, a man remarkable for sagacity and correct observation, in speaking of the contagiousness of this disease, remarks:—"It is a fact so evident to those who have seen much of it, and who have paid attention to the subject, that I should have spared myself the trouble of saying any thing about it, did I not know that there are some physicians in this country who still dispute this point: one which I think can be as fully demonstrated as that the measles, or small pox, or any other disease universally allowed to be contagious, is so." This remark, he goes on to illustrate with striking facts within his own experience.

Drs. Baker and Cheyne, in their work on fever, state in relation to the epidemic that prevailed in Ireland, during the years 1816 and '17, that "when the disease commenced in a poor family, or was introduced by a stranger or lodger, it generally extended to all its members. The poor were the chief sufferers on account of their neglect of cleanliness, particularly with regard to their clothing, and the smallness and crowded state of their apartments. On the other hand, the superior classes, whose circumstances were different, their clothing more frequently changed, their persons more cleanly, the apartments less crowded, and better ventilated, and among whom seclusion from the sick was practised, generally escaped the disease."

Numerous instances of the *infectiousness* of fever could be adduced as having occurred here in our own city. For example, nurses and visitors coming from a distance to see

and wait upon their sick friends, and then returning home, to be soon after taken down with the same disease:—The many instances of girls leaving the mills to become fever nurses in the boarding houses, and in a short time falling sick themselves; girls leaving boarding houses while sick, and entering private families, where they have very soon communicated the malady to the rest of the household, and the still more numerous instances when the disease having once broken out in a corporation or other boarding house, has been communicated from one to another, until many of its inmates have fallen sick.—Such instances are numerous, and must have been noticed by every physician of any considerable practice in our city.

In this state of things, the important question arises, whether the evils here spoken of are susceptible of remedy? In the first place, as it regards the mills. Are they at fault in respect to ventilation? I have made enquiries upon this subject, and have become satisfied that many, if not all of them, are more or less imperfectly supplied with *pure air*. All the rooms in each mill are not equally deficient in this respect, and this difference in many instances seems to be owing to the mere thoughtlessness or negligence of the overseers. In other instances, it depends, as it appears, upon the supposed effect that a free admission of air is to make upon the *running of the work*. The carding-rooms, for example, are found, in some instances, to have their windows closed through the entire winter, so that the only aperture for the ingress of air, has been an occasionally open door, or the belt holes through the floor.

Air thus confined for many months, in rooms occupied by some fifty persons, for twelve or fourteen hours every day, (excepting Sundays) must, sooner or later become a powerfully predisposing cause of disease. But, the evil here spoken of is not limited, I suspect, to the winter season, only. In the summer months, too, I understand that in certain states of the atmosphere, it is found that work '*runs better*' with the

windows of the room closely shut ; and during this period too, I understand, the rooms are not ventilated, even through the night.* If this air, so vitiated in the mills, and there breathed so many hours, may be supposed to produce a deleterious effect upon the constitution, strongly predisposing it to disease, the mischief is not likely to be cured by the enjoyment of a purer atmosphere, in the lodging rooms of the boarding houses. The mischief from bad ventilation is there felt to a still greater degree. Now and then we see an exception ; but, as a general rule, the ventilation of our corporation boarding houses is very imperfect, particularly as regards the sleeping apartments ; a fact which no man in the ordinary possession of his senses, visiting these rooms during sickness, will question. But, how far any improvement in this respect can be introduced upon our corporations, is perhaps a matter of some doubt.

An occasional inspection, however, of these establishments, particularly during the summer months, might perhaps lead to the detection of a variety of evils besides the one just alluded to, that might, and ought to be removed. It would be discovered, I think, in these investigations, that in at least some of the boarding houses, there is a manifest disregard to cleanliness. It would also be discovered, that in some of the tenements there are more occupants than their rooms will well accommodate. In this state of things, the sleeping rooms particularly, become crowded, and, in spite

* The effect of a vitiated atmosphere, from imperfect ventilation is strikingly illustrated in an account given by Dr. Nelson Fanning, of Gilboa, N. Y. of a fever that made its appearance in that village, during the last winter. Of 123 operatives employed in a cotton mill, it appears, that in the course of two months, nearly one fourth were seized with Typhoid fever. And, from the history of the disease, which is given with remarkable precision and clearness, there can be very little doubt that its origin may be justly traced to a gross neglect with regard to ventilation. This neglect, it seems, did not exist to an equal extent, throughout the entire mill, but was most remarkable in the carding rooms, where the windows had been kept as nearly air-tight as possible, through the whole winter.

of ventilation, the air therein is constantly offensive, and of course, deleterious in its effects.

It is in such houses, and under such circumstances, we are to expect an outbreak of fever ; and, when once commenced, it will with difficulty be checked until the establishment has been entirely evacuated, and thoroughly purified. Several striking instances could be given in illustration of this fact — instances, where, notwithstanding the greatest efforts at cleanliness and ventilation, the infection has been communicated from one to another, for many months in succession.

In view of these facts, the important practical question arises, whether fever, or indeed any other equally contagious disease, admits of being in any degree controlled or prevented, and to what extent any measures adopted with this view, would be likely to prove effectual.

I have already alluded to the authority of foreign writers, on this point, and it is hardly necessary to repeat that they uniformly express the opinion that in all instances, during the prevalence of fever particularly, “it is of the highest importance that constant attention be paid to cleanliness — that every apartment in the houses should be thoroughly ventilated — the numbers in the sleeping rooms kept small, and all communication between the sick and those in health as completely cut off as possible.”

These measures are evidently not so urgently necessary in New England, as in the more crowded manufacturing towns of Europe ; yet even here in Lowell there can be no doubt but they would have a most important effect in controlling the extent, and diminishing the severity of disease, as we generally meet with it in our boarding houses.

By the establishment of a hospital, at least one of the objects above alluded to, has, to a very considerable extent, been realised. By such an arrangement, it has been found practicable, in a large proportion of cases, to cut off, by an early removal, all communication between the sick and those in

health, and thus afford a comparative security to the rest of the household.

The extent of benefit secured by this single measure cannot be easily estimated; and it would be equally difficult to calculate the evils that have arisen where this provision has been neglected. Besides exposing a whole family to an infection which becomes the more intense and certain in its action the longer it continues uncontrolled, the mischief has been communicated to other houses on the same, and even other corporations, and thus been propagated to an indefinite extent.

This fact, and the desire to confer an immediate benefit upon those actually sick, were probably among the most important considerations that prompted the establishment of the Lowell Hospital. The condition of patients suffering from sickness, in the boarding houses on the Corporations, is already pretty well understood. Their comparative condition, when removed to a place arranged for the exclusive purpose of affording every possible comfort, under such circumstances, can be appreciated only by those who are enabled to speak from experience.

Although a private institution, it is well understood that the hospital has always been open, at all reasonable hours, not only to the visits of those wishing to see their sick friends, but to those who from a worthy curiosity, wish to examine the establishment.

Physicians, too — those in regular and reputable standing — it is well known, are always made welcome in their visits, and have had as free access to its wards, as if the institution were of the most public character.

REPORT

LOWELL HOSPITAL.

1880-1881.

ISSUED BY THE LOWELL HOSPITAL.

WILLIAM L. LORRAINE, M.D.

CHIEF OF CLINIC.